

Patent
Attorney Docket No. LYNN/0020

- 56 separator*
F ~~27~~ A bipolar plate for electrochemical cells, comprising:
two porous, electrically conducting sheets selected from the group consisting of expanded metal mesh, metal foam, conducting polymer foam, porous conductive carbon material and combinations thereof, wherein the porous, electrically conducting sheets have interdigitated channels communicating to the edge of the sheets;
an electrically conducting gas barrier disposed in electrical contact between the sheets, wherein the electrically conducting gas barrier is disposed between opposing faces of each sheet, and
a cooling fluid channel within the electrically conducting gas barrier.--

- 8 separator*
F ~~28~~ The bipolar plate of claim 1, wherein the flowfield is formed by pores in the porous electrically conducting member.--
39 separator
F ~~39~~ The bipolar plate of claim 7, wherein the flowfield is formed by pores in the porous electrically conducting member.--
40 separator
F ~~40~~ The bipolar plate of claim 20 further comprising two or more polymeric cell frames peripherally enclosing the two porous electrically conducting sheets.--

- 38 separator 37*
F ~~41~~ The bipolar plate of claim 40, wherein the gas barrier is received between the polymeric cell frames.--

REMARKS

This is intended as a full and complete response to the Office Action dated September 29, 1998.

Claims 3 and 23-24 stand rejected under 35 USC §112, second paragraph as being indefinite. Claim 3 has been canceled to avoid redundancy. Claims 23 and 24 have been

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amended to clarify that both porous electronically conducting sheets are being referred to therein. Reconsideration is requested.

Claims 1, 2, 6-9, 11-15 and 30 stand rejected under 35 USC §102(e) as being anticipated by Grosvenor et al. Applicant has attached its Declaration of Oliver J. Murphy Under 37 C.F.R. §1.131 setting out that the claimed invention was completed prior to the December 6, 1996 filing date of the application and that the issued patent was not published more than one year before the effective filing date of the present application. Therefore, Applicant asserts that Grosvenor et al. is not prior art under 35 U.S.C. § 102(e) and that the rejection of claims 1, 2, 6-9, 11-15 and 30 is no longer proper.

Claim 1 as amended clarifies that the porous electronically conducting member forms flowfields. Support for this amendment can be found on page 8, line 24 of the original specification. Grosvenor discloses a bipolar plate for use in a lead-acid battery having a polymer/metal layer laminated on each surface with a lead layer. The lead layer is laminated with a conductive adhesive designed to fill any holes or defects in the lead sheet thus protecting the polymer/metal core. Grosvenor therefore does not teach, show or suggest a porous electronically conducting layer forming flowfields. Reconsideration and withdrawal of the rejection is requested.

Claims 5, 10, 16-22, and 25 stand objected to as being dependent upon a rejected claim. Claims 5, 10, 16-19 and 25 and the limitations of the base claims and any intervening claims are presented as new claims 31-37.

Applicant respectfully points out that claim 20 is an independent claim and is patentable over Grosvenor by the recitation of an electronically conducting gas barrier disposed between opposing faces of two porous sheets. Grosvenor does not teach, show or suggest a gas barrier between two porous electronically conducting sheets.

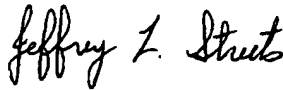


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CONCLUSION

The foregoing remarks and amendments place the claims in condition for allowance. Applicant requests reconsideration of the claims in light of the above remarks and amendments. Applicant authorizes the Examiner to charge any additional fees that may be due to the deposit account 500714/Lynn/0020.

Respectfully submitted,



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